

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Asa Malmqvist et al.

Examiner: Unassigned

Serial No.: Unassigned

Art Group: Unassigned

Filing Date: January 28, 2002

Docket No. 150-045

Title: Method For Biological Cleaning of Wastewater

Hon. Commissioner of Patents and Trademarks

U.S. Patent and Trademark Office

Washington, D.C. 20231

PRELIMINARY AMENDMENT

Dear Sir:

Prior to examination of the above-identified patent application which is being filed concurrently herewith, please amend the application as follows:

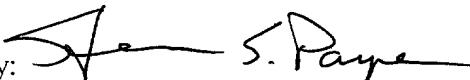
IN THE CLAIMS

Please cancel claims 1-6 without prejudice or disclaimer. In addition, please add new claims 7-12 as shown on the attached sheets.

REMARKS

Prior to examination, new claims 7-12 have been added to the application to place the application in better form for examination. If the Examiner believes that a telephone interview may expedite the prosecution of the Application, the Examiner is invited to contact the below attorney at the indicated telephone number.

Respectfully submitted,

By: 

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We Claim:

7. A method for biological purification of wastewater wherein the wastewater is purified first in a biofilm process and then in an activated sludge process all surplus biomass from the biofilm process or the main portion thereof is allowed to pass to the activated sludge process, wherein the biological degradation process in the biofilm process is operated under limitation of one of the nutrient salts, nitrogen or phosphorous by the quotient between the amounts of BOD_5 and biologically available nitrogen supplied to the biofilm process. Being kept within the interval from 60:1 to 240:1, preferably within the interval from 80:1 to 180:1, particularly within the interval from 100:1 to 150:1 and/or the quotient between the amounts of BOD_5 and biologically available phosphorus supplied to the biofilm process being kept within the interval from 300:1 to 1200:1, preferably within the interval from 450:1 to 900:1, particularly within the interval from 500:1 to 700:1.

8. The method according to claim 7, wherein the biofilm process is operated at a load within the interval from 2 to 20 kg BOD_5 per m^3 process volume and 24 hours, preferably within the interval from 3 to 15 kg BOD_5 per m^3 process volume and 24 hours, particularly within the interval from 4 to 10 kg BOD_5 per m^3 process volume and 24 hours.

9. The method according to claim 7, wherein the biofilm process is arranged such that the carrier material for microbial growth in the process is kept completely or partially in suspension and movement by the supply of air to the process.

10. The method according to claim 7, wherein a partial flow of outgoing wastewater from the separation step of the active sludge process is returned to the biofilm process.

11. The method according to claim 7, wherein further biologically available nitrogen and/or phosphorus is dosed directly to the activated sludge process.

12. The method according to claim 7, wherein the biofilm process is performed in at least two steps.

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